



BRIDGE INSPECTION REPORT

NBI Number: 034520

Bridge Number: I64-103-04691 C

Facility Carried: I-64

Feature(s) Intersected: OHIO RIVER & WATER STEET

Location: 00.11 E of SR 111

Logmile Over: 0123.210

Logmile Under: 0000.000

Reference Post: 124

Offset: 86

Inspection Date: 10/01/2009

Inspected By: (* is primary inspector)

Brian Dilworth*, Brad Syler, Clay Brookins

Inspection Type:

- ☐ Routine ☐ Special
- ☐ Fracture Critical
- ☒ Underwater
- ☐ Scour
- ☐ Damage

Comments:

Other Info:

- ☐ Under Construction
- ☐ Initial Inspection
- ☐ Flag for Central Office Review

This inspection report is property of the Indiana Department of Transportation. Questions related to the content of this report should be directed to the INDOT district bridge engineer or the INDOT state central office.

TABLE OF CONTENTS

NBI Number: 034520
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SECTION	<u>PAGE</u>
CHANNEL & CHANNEL PROTECTION	1
FOUNDATION DATA	2
92B UNDERWATER	3
92B. UNDERWATER P.O.A	5
SCOUR P.O.A	7
SCOUR	8
SCOUR COMMITTEE	12

CHANNEL & CHANNEL PROTECTION (61)

NBI Number: 034520

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Feature(s) Intersected: OHIO RIVER & WATER STEET

Overall Rating (61) 61 Rating Based on:

61. Overall Comments

ITEM	RATING	COMMENTS	GOVERNING
61.01 Scour/Ersn. UpStream	8		<input type="checkbox"/>
61.02 Scour/Ersn. DownStream	8		<input type="checkbox"/>
61.03 Drift	6		<input type="checkbox"/>
61.04 Vegetation	8		<input type="checkbox"/>
61.05 Channel Change	8		<input type="checkbox"/>
61.06 Adequacy of Opening	8		<input type="checkbox"/>
61.07 Misc. Hydraulic Features	N		<input type="checkbox"/>
61.08 Channel Protection	7		<input type="checkbox"/>
61.09 Type	A		<input type="checkbox"/>
71.1X Overtopping Possibilities	1		<input type="checkbox"/>
71.2X Overtopping Traf Delays	3		<input type="checkbox"/>
71. Waterway Adequacy	9		

THINK SAFETY FIRST

FOUNDATION DATA (113B)

NBI Number: 034520

Bridge Number: I64-103-04691 C

Facility Carried: I-64

Feature(s) Intersected: OHIO RIVER & WATER STEET

ITEM	RATING	COMMENTS
113B.01 Total # of all Piers	6	
FOUNDATION AT ABUTMENTS		
113B.02 Abutment #1 type	N	
113B.03 Abutment #2 type	N	
FOUNDATION AT INTERMEDIATE PIERS		
113B.05 # of Int Piers	6	
113B.06A Types of Int Piers	A	<p>Coded as an 'A' = Spread Footing, NO Piles, for Piers #1, #2, & #3.</p> <p>Bottom of Seal elv. = 352.50' @ Pier #1 Bottom of Footing elv. = 355.00' @ Pier #1 Bottom of Seal elv. = 355.50' @ Pier #2 Bottom of Footing elv. = 357.50' @ Pier #2 Bottom of Seal elv. = 362.20' @ Pier #3 Bottom of Footing elv. = 364.70' @ Pier #3 [WTD, 04/23/2005]</p>
113B.06B Types of Int Piers	D	<p>Coded as a 'D' = Spread Footing, ON Piles, for Pier #4.</p> <p>Bottom of Footing elv. = 395.50' @ Pier #4 [WTD, 04/23/2005]</p>
113B.06C Types of Int Piers		
113B.06D Types of Int Piers		
113B.06E Types of Int Piers		
113B.06F Types of Int Piers		
113B.08 # of Piers in the Water	02	Piers #2 & #3
113B.09 # of Piers with any Scr	00	

THINK SAFETY FIRST

INDOT UNDERWATER EVALUATION

NBI Number: 034520
Facility Carried: I-64

Bridge Number: I64-103-04691 C
Feature(s) Intersected: OHIO RIVER & WATER STEET

NBI Underwater Data

113A NBI Scour Evaluation Code 7

Official Proposed

92B.01 Requires Underwater Inspection? Y Y

92B.02 Inspection Frequency (Months) 48 48 93B Underwater Insp Date: 11/08/2007

Notes and Comments:

Changed the Underwater Inspection Frequency from 11/10/2004 to 11/08/2007. Underwater Inspection conducted by Collins Engineers on 11/08/2007.

The previous Underwater Inspection was conducted on 09/22/2001.

Current Underwater Inspection Data

Date of Inspection 11/08/2007

Inspected By: District N

Consultant (name)

Collins Engineers

Proposed Inspection Frequency (mm) 48

Reason for Above:

11/08/2007 U-W Insp.- This interval was used because there were no significant changes in the amount of foundation seal exposure, the condition of the submerged substructure units or the overall channel bottom profile in the vicinity of the structure since the last underwater inspection.

Number Piers/Abuts in Water 02 ☒ Leave on NBI Underwater Inspection List

Number Piers/Abuts with Scour 00 ☐ Add to 5 Year Inspection List

Water Velocity (ft./sec.) 1.5 Reinspection Date 11/08/2011

Time to Inspect (hours) 4.5

Reason for Underwater Inspection (Deepest Water Depth and Location):

Water 19.0' deep @ Pier #2, McAlpin Dam upstream, barges.

Additional Inspection Data:

Method of Inspection Waded: ☐ Dove: ☒ Used Boat: ☒

Cross Sections Sounding Pole ☐ Fathometer ☒

Water Quality OK ☐ Poor ☒

Do any items require a deficiency report? ☐

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INDOT UNDERWATER EVALUATION

NBI Number: 034520
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Feature(s) Intersected: OHIO RIVER & WATER STEET

Master List Items

92B.1000 Members to Inspect

Pier #1 - dry, pier on Kentucky's shore
Pier #2 - water 19.0' deep, pier in middle of river
Pier #3 - water 14.0' deep, pier near Indiana's shore.
Also Inspected on 09/22/01, 11/10/2004.

92B.2000 Inspection Procedures

Dive Pier #2 and #3.
Notify Coast Guard in St Louis, (314)539-3755 ext.2380

92B.3000 Inspection / Access Equipment Needed

Diving gear, probe, etc.
Strong currents & a lot of river traffic in the area.

93A. 4000 Major Inspection Findings

Foundation seal exposed, scaling & cracks in column, drift
Scour repairs, done 1997, rip rap @ P. #2,3,4,5,6.
Large flood in March 1997, after inspection.

Drift/derls, Miscellaneous Findings

Consultant's Recommendations

Repair areas of impact damage with exposed reinforcing steel at Pier #2.
Monitor scaling, poor consolidation, and areas of minor impact damage.
Monitor vertical cracks with efflorescence at Pier #2.
Monitor corrosion on steel icebreakers on Pier #2 and #3.
Monitor channel bottom configuration.

92A.5000 INDOT Action Taken/Dates

Programmed Contract Work

Biennial Inspection Item

Items Requiring Inspection? ☐

Comments

THINK SAFETY FIRST

92B. UNDERWATER PLAN OF ACTION REPORT

NBI Number: 034520

Bridge Number: I64-103-04691 C

Facility Carried: I-64

Feature(s) Intersected: OHIO RIVER & WATER STEET

Title: Routine Underwater inspection (by consultant) Date Due: 11/8/2011 12:00:00 AM

Status: Previously Completed: --

Freq.: 48 months Freq. Description:

Description:

1. Consultant Inspection of Substructure Units normally in the water at or near low flow elevation. (If more than one additional Unit is in the water than is coded as "normal number" at low flow, then the Consultant "must" get approval to inspect the bridge at that time.)

2. Consultant conducts a Level-1 In-water/Underwater Inspection.

3. Consultant takes channel Cross-Sections at required locations and around all Substructure Units in the water.

4. Consultant prepares a Report, complete with drawings, narrative, and INDOT Report Forms.

5. Consultant provides INDOT with all required data to maintain and update its NBI Data Base and NBI Master List.

Title: Date Due: --

Status: Previously Completed: --

Freq.: -- Freq. Description: Files

Description:

1. INDOT Inspectors should review the Underwater Master List after each Biennial Inspection to ensure that the data is correct and up-to date.

2. INDOT Inspectors are required to read the Consultant's Underwater Inspection Report, and act on its findings, including trying to find any needed information for the next inspection, such as the As-Built Plans and Construction Records, so that discrepancies can be corrected.

3. INDOT Inspectors are required to provide to the Consultant, prior to his Inspection, the most recent INDOT Inspection Reports and data, as well as any Bridge Plans for work that has been completed since the last Underwater Inspection.

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92B. UNDERWATER PLAN OF ACTION REPORT

NBI Number: 034520
Facility Carried: I-64

Bridge Number: I64-103-04691 C
Feature(s) Intersected: OHIO RIVER & WATER STEET

Title: Date Due:
Status: Previously Completed:
Freq.: Freq. Description:

Description:

INDOT Inspectors can and are encouraged to conduct an inspection to fulfill the Underwater Inspection Requirement, whenever the water is low enough for them to safely conduct all parts of the inspection. This will move the next Consultant Inspection to be moved out into the future a whole cycle from when the INDOT inspectors conducted their inspection, thus saving INDOT money.

In order for an INDOT Inspector's Inspection to count towards the required Inspection, they MUST:

1. Read-up on, and be familiar with what a Level-1 Underwater Inspection Requires.
2. Have the proper equipment to conduct an inspection safely, (including having an inspection team member present when they are in the water).
3. Conduct a Level-1 underwater type Inspection on ALL substructure Units in the water.
4. Take Channel Depth Readings at the Upstream Coping area, Downstream Coping area, and the Centerline of the bridge.
5. Take Channel Depth Readings all around each Substructure Unit in the water.
6. Draw a "Sounding Plan" sheet, and detailed Substructure Unit drawing, noting all depths and deficiencies. {These drawings must be clear enough so that on the next required Inspection, the Consultant can understand and use the data to determine what if any changes have occurred.}
7. The Inspectors must ensure that INDOT's Consultant is aware that an Inspection has been conducted, and The Consultant does not also conduct an inspection.

NOTE: INDOT Inspectors should recommend in writing, and provide details to the Central Office Bridge Inspection Unit, if they feel that they can conduct the needed level of inspections during their Biennial Inspections, and the bridge should no longer be on the Consultant Underwater Bridge Inspection Master List. If the bridge is removed for the Master List, then INDOT Inspectors MUST inspect around all Substructure Units, on each Biennial Inspections.

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SCOUR PLAN OF ACTION REPORT

NBI Number: 034520	Bridge Number: I64-103-04691 C
Facility Carried: I-64	Feature(s) Intersected: OHIO RIVER & WATER STEET

Title:	<input type="text"/>	Date Due:	<input type="text" value="--"/>
Status:	<input type="text"/>	Previously Completed:	<input type="text" value="--"/>
Freq.:	<input type="text" value="--"/>	Freq. Description:	<input type="text" value="0"/>
Description:	<input type="text" value="--"/>		
Notes:	<input type="text"/>		

No Scour P.O.A. Found

INDOT SCOUR AND FOUNDATION EVALUATION FORM

NBI Number: 034520

Facility Carried: I-64

Bridge Number: I64-103-04691 C

Feature(s) Intersected: OHIO RIVER & WATER STEET

Central Office Screening

Date of Last Review or Update 03/09/2000

Scour Risk MODERATE

(113A) NBI Scour Evaluation 7

Notes and Data:

Spread footings, NO piles, Scour repairs-rip rap, 1997

District Office Screening

Date of Last Data Update 11/08/2007

(113R) District Scour Evaluation

Field Observed Scour Problems:

11/08/07 U-W Insp.- No scour-related deficiencies observed.

This bridge is considered as LOW Risk for Vulnerability for Scour. This is based on the Piers near the Ohio River (Piers #1, #2, & #3) being keyed into bedrock, and Pier #4 being set on piles.

There is small sized rip rap on the Indiana bank.

The 1961 Flow Line elv. = 373.70'

The Q-100 Flow Line elv. =

The Q-100 Scour Depth elv. =

No Scour Calculation Letter is on file in the Central Office Bridge Inspection Unit, for this bridge.[WTD, 04/23/2005]

☐ Scour Committee Review

Past Scour Problems:

Rip rap @ P. #2,3,4,5,6, 1997Coded as a '7'. This is the code used when a "Designed Scour Countermeasure" has been installed around the foundations of a bridge. In the 1997 Rehab, properly sized rip rap was supposed to have been placed around Piers #2, #3, & #4.

Foundation Data	Code	Comments
113B.01 Total # of all Piers	6	
113B.08 # of Piers in the Water	02	Piers #2 & #3
113B.09 # of Piers with any Scr	00	
FOUNDATION AT ABUTMENTS		
113B.02 Abutment #1 (W/S)	N	
113B.03 Abutment #2 type	N	
FOUNDATION AT INTERMEDIATE		
113B.05 # of Int Piers	6	
113B.06A Types of Int Piers	A	Coded as an 'A' = Spread Footing, NO Piles, for Piers #1, #2, & #3.
		Bottom of Seal elv. = 352.50' @ Pier #1
		Bottom of Footing elv. = 355.00' @ Pier #1
		Bottom of Seal elv. = 355.50' @ Pier #2
		Bottom of Footing elv. = 357.50' @ Pier #2
		Bottom of Seal elv. = 362.20' @ Pier #3
		Bottom of Footing elv. = 364.70' @ Pier #3

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INDOT SCOUR AND FOUNDATION EVALUATION FORM

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[WTD, 04/23/2005]

113B.06B Types of Int Piers	D	Coded as a 'D' = Spread Footing, ON Piles, for Pier #4.
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Bottom of Footing elv. = 395.50' @ Pier #4
[WTD, 04/23/2005]

113B.06C Types of Int Piers		
-----------------------------	--	--

113B.06D Types of Int Piers		
-----------------------------	--	--

113B.06E Types of Int Piers		
-----------------------------	--	--

113B.06F Types of Int Piers		
-----------------------------	--	--

113B.08 # of Piers in the Water	02	Piers #2 & #3
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113B.09 # of Piers with any Scr	00	
---------------------------------	----	--

Foundation Numbering	East (south) to West (north), (Piers #1 to #6)
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Design Plans:

As-built Plans:

Soils Information

Original Flow Line	373.70	Original Flow Line	1961
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Bottom of Footing	362.20	Bottom of Seal @ Pier #3	
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Minimum Pile Tip Elevation

Notes and Comments:

11/08/2007 U-W Insp.- Max water depth located at Pier #3.

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Scour Calculation

Purpose of Scour Calcs:

Scour Calcs. Letter: Date

☐ New Bridge

Q100 Water Surface Elevation

New #:

Q100 Scour Depth Elevation

☐ Rehab

Q100 Flow Velocity

☐ Scour Problems

Q500 Water Surface Elevation

☐ Other

Q500 Scour Depth Elevation

Current Flow Line Elevation
Used for Calculations

Recommendations:

Scour Monitoring Data

Is Bridge on a District Monitoring Program?

No

Reason for Monitoring

Who Monitors the Bridge?

Is Bridge on a District Monitoring Program?

Long Term Scour Solution

008 Bridge Number

008A NBI Number

034520

006A Features Intersected

OHIO RIVER & WATER
STEET

Update Date

1. What to Monitor: List substructure units to monitor

2. What to Look for: List specific signs indicating a

3. When to Monitor: List what initiates monitoring

4. Who Monitors: Unit and bridge inspectors; others

5. Describe Monitoring Preparations: Q100 flowline marked on piers, etc.

6. Describe Channel Probing/Depth Reading Procedures:

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INDOT SCOUR AND FOUNDATION EVALUATION FORM

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7. Closing procedures:

8. Historic Monitoring

Monitoring Date

Water Level

Cause of Highwater

Comments

9. Miscellaneous:

10. Have Drawings Available: General Plan; Layout; Pier/Abutment

Maintenance Notes

Is this a major drift collecting bridge?

Angle:

Is there an angle of ATTACK for normal flow?

Is there an angle of ATTACK for highwater flow?

Programmed Contract Work

Seismic Items

1. On Primary Evacuation

2. Seismic Countermeasures:

3. Seismic Design:

4. Items to review after event

Seismic Notes

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INDOT SCOUR COMMITTEE REVIEW

NBI Number: 034520
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Feature(s) Intersected: OHIO RIVER & WATER STEET

Scour Data

As Built Flow Line Elevation

Consultant Report

0

Q100 Water Surface Elevation

Consultant Calcs. Date

Q100 Scour Depth Elevation

☐ Design Plans Checked

Q100 Flow Velocity

☐ As-Built Plans Checked

Q500 Water Surface Elevation

Q500 Scour Depth Elevation

Q500 Flow Velocity

Comments

Central Office Screening

Date of Last Review or Update

Scour Risk

(113A) NBI Scour Evaluation

7

Committee Notes

Hydraulic Section Notes:

Central Office Bridge Inspection Notes:

Geotechnical Section Notes:

Date of Scour Review Meeting

Recommended Action:

Scour Committee Comments

☐ Schedule for Rehab (Scour Countermeasures)?

Recommended Work for

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